$$dP = \frac{\partial P}{\partial V} dV + \frac{\partial P}{\partial T} dT$$

$$dP = \frac{\partial P}{\partial V}dV + \frac{\partial P}{\partial T}dT = \left(-\frac{T}{V^2}\right)dV + \left(\frac{1}{V}\right)dT$$

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$$dP = (-64)(0.005) + (4)(0.03) = -0.2$$

$$E = \frac{1}{2}mv^2$$

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$$dE = \frac{1}{2}(10)^2(-1) + (10)(10)(1) = 50$$